Approved For Release 2005/02/17 : CIA-RDP78B04770A000100110033-4

998125

NPIC/P&DS/D/ 779
10 February 1966

MEMORANDUM FOR: Chief, Information Processing Division, NPIC

X1 ATTENTION: [redacted]

SUBJECT: Project #998125, AP-3 Analytical Stereo Plotter

REFERENCE: IPD Memorandum TS-159675-66, dated 27 January 1966

1. The purpose of this memorandum is to clarify any misconceptions that may have arisen in the development of the AP-3. Enclosed is a summary of what has occurred in terms of immediate operational requirements, X1 meetings held with [redacted] and tentative future plans that may invoke more active participation by IPD.

2. In response to a TID request for an analytical stereo plotting instrument capable of handling non-conventional photography; it was found that, of the available systems on the market, the AP-2 system most closely filled the requirements of TID. Due to the immediate need for this type of instrument at NPIC and to hasten delivery, it was decided to contract X1 with [redacted] for a standard AP-2 with a minimum of development concepts and modifications. The same type computer, logic circuitry, comparator, and coordinate plotting table would be used but the following changes would be made: the system would be able to accommodate terrestrial photography, have a continuous zoom system from 10X to 100X, have anamorphic corrections and a servo drive from comparator to plotting table. At the time of the contractual action a thoroughly tested stereo strip program was not available at NPIC, so it was decided that this would be handled as a retrofit package when the mathematics became available.

The new model was designated the AP-3 and it will accommodate: convergent pan, oblique frame, and terrestrial photography with focal lengths varying from 1 inch to 48 inches as well as conventional mapping photography. The AP-3 system will handle the above photography as a self-contained unit with a minimum of on-line or back-up computer support.

3. As the mathematics for stereo strip photography became available, TID requested the Project Monitor to arrange a meeting with [redacted] 25X personnel to discuss the possibility of additional programming for the AP-3 system.

This meeting took place on 25 January 1966 as stated in the above reference. The short-comings of the present computer in the AP-3 system, as reported in the same reference, had come to the attention of both TID and P&DS prior to contractual action butwere accepted as a trade-off for early delivery and application to existing stereo plotting requirements.

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As a consequence of this meeting, [redacted] will study the problem and submit a proposal to TID for additional programming and circuitry to accommodate strip photography and increase the range of focal lengths. If the AP-3 can handle all of this as a self-contained system, the proposal will so state, but there is a good chance that preprocessing of information on other computers will be required. The only logical approach is to await the proposal, but under no circumstances will the delivery of the instrument be delayed in order to develop new hardware or programs. 25X

4. All indications are that the analytical approach to stereo plotting will be further pursued. In this event increased computer capabilities for the system will be demanded of the contractor. If future Analytic Plotters are to be delivered, an entirely different approach to the computer problem will be taken, and P&DS would welcome IPD support in establishing the proper computer support and system requirements.

5. In regard to paragraph 6 of the above reference, IPD has been contacted and kept aware of the progress on this project. It was IPD that advised on the input-output code (ASA standard) that will be used as well as the Model 35 Teletype to be used in this system. In addition an IPD representative was requested to accompany our monitor on his November inspection trip to the [redacted] but this was rejected by IPD because this was a self-contained system. 25X

6. In the same paragraph a statement is also made pertaining to the training of TID programmers. In an attempt to capitalize on the AP-2 experience of ACIC and AMS, both of these organizations were contacted and asked about their recommendations. Both recommended that operational photogrammetrists study programming at the [redacted] facility while the contractor checks out the AP-3 system. When the system is delivered to NPIC, the contractor will only check out the instrument operators. The Project Monitor requested two proposals from [redacted] one to train maintenance people and the second to train TID programmers; these proposals were turned over to [redacted] on 25 January 1966. As was stated in paragraph 2 of the reference, all programs must be written in absolute code and this is one of the main reasons ACIC and AMS recommended operational type programmers. The AP-3 system will be delivered pre-programmed and all the various tapes will be a part of the package. The programming carried out at NPIC will be mainly modifications to handle operational needs. 25X 25X X1

7. A look at the number of "on-line" type mensuration instruments that are presently contracted for or proposed for future requirements should reassure IPD that P&DS plans to take advantage of this capability whenever possible.

[redacted] 25X

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